IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Sonya Franklin	Examiner: Charles L. Patterson, Jr
Serial No.:	09/785546	Group Art Unit: 1652
Filed:	February 16, 2001	Docket No.: 875.037US1
Title:	ARTIFICIAL ENDONUCLEASE	

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Dr. Sonya Franklin, declare as follows:

1. I am the inventor of the claims of the present application and make this Declaration in support of the patentability of the claims of the above-referenced application.

2. In the Office Action dated October 4, 2004, the Examiner questions whether certain claimed peptides are enabled.

3. With regard to the activity of P4 and P3W, Kovacic et al. (J. Am. Chem. Soc., 125:6656 (2003)) and Sirish et al. (J. Inorg. Biochem., 91:253 (2002)) (both of record) disclose that P4 and P3W bound metal and both peptides were found to cleave DNA.

4. CM1 (SEQ ID NO:6) is a loop modified Engrailed peptide. The carboxy-terminal 36 residues of SEQ ID NO:6 which include the metal binding domain are highly related to those in P3W, a synthetic peptide shown to have activity (see paragraph 3). The additional residues at the N-terminus of CM1 relative to P3W include further nucleic acid binding domain residues (see Figure 2 in the specification for the sequence of CM1 and P3W). CM1 is also structurally related to synthetic peptide C2, a synthetic peptide that binds lanthanides and calcium.

C2 has a very similar nucleic acid binding domain at its N-terminus relative to CM1 (31/32 identical residues). With regard to overall sequence identity, 30/42 of the N-terminal residues of C2 (which include a nucleic acid binding domain and a metal binding domain) are the same as those in CM1, and 15/15 of the C-terminal residues of C2 are the same as those in CM1.

5. To detect metallopeptide binding, increasing concentrations of EuC2 were incubated with plasmid DNA (pTYB1) in 10 mM Tris, 25 mM NaCl, pH 7.9 for 15 minutes at room temperature (top panel of Figure 1 attached hereto). A similar assay was conducted to detect cleavage of plasmid DNA (samples were incubated at 37°C for 24 hours) (lower panel of Figure 1). EuC2 bound and cleaved DNA.

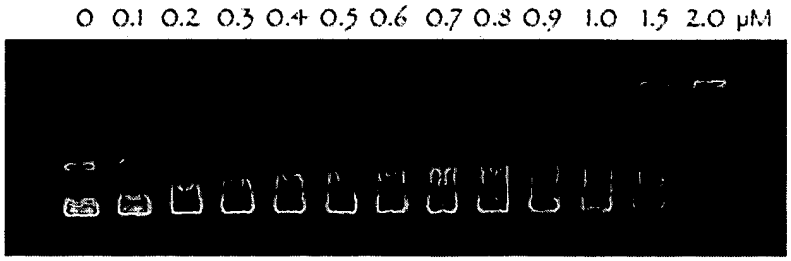
6. Based on the structural similarities of P3W, C2 and CM1 and the activity of P3W and C2, CM1 is very likely to bind and cleave DNA.

7. With regard to domains known to bind a lanthanide, calcium or a metal in the same group as calcium, those domains are also likely to bind the later actinides, i.e., americium (Am) to lawrencium (Lr).

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: 12/28/04

By: _____
Dr. Sonya Franklin



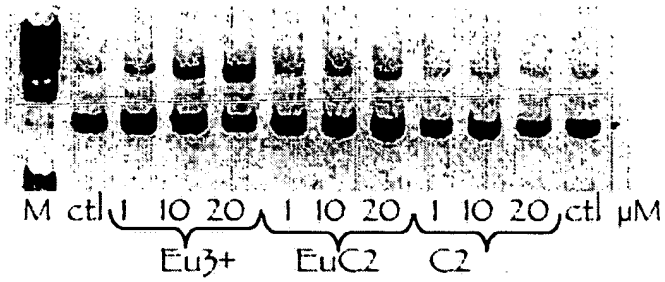


FIG. 1